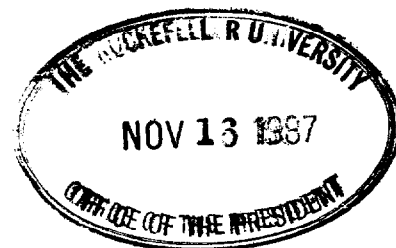


X ↓ Chloroacetate x F Penfold
O ↓
✓ 6/24/92
m g



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November 11, 1987

Dear Dr. Lederberg:

Thank you for your letter: I am afraid that the answers to most of your latest questions are still uncertain. I don't know anything about chloroacetate. However, John Guest in Sheffield, England made fluoroacetate resistant mutants. These are deficient in acetate kinase and/or phosphotransacetylase. They cannot grow on acetate or ferment sugars anaerobically to produce acetic acid. They map at pta/ack (50 min). These are quite different in their properties from either the chloroacetaldehyde or bromo-propanol mutants.

The chloroacetaldehyde resistant mutants are specifically defective in alcohol and acetaldehyde dehydrogenase (both activities are probably due to the same protein). They map at adhE (27 min).

The bromopropanol mutants are not affected in alcohol/acetaldehyde dehydrogenase, or in anything else obvious. They are totally dependent on BuOH or BrPrOH on succinate as carbon source whereas on glucose they grow almost normally without any solvent added. I haven't done any incorporation studies - we stored the BuOH-dependent strains away and worked mostly on the adh mutants. We haven't investigated formate hydrogenlyase in them either. I suspect that some of the fluoroacetate mutants have multiple defects in anaerobic growth but as far as I'm aware no one has assayed FHL yet - thanks for the suggestion - I will try and check this sometime not too far distant.

I was sorry to hear you were too busy to present a seminar here this year. I am only in charge of seminars until May 1988, but if you were willing to arrange a visit sometime next academic year (1988-1989), we could fix up a date a long time ahead for the next Ogur seminar. ✓

Yours sincerely,

David Clark.

David P. Clark